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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,724	11/03/2000	Yoshiharu Sasaki	Q61576	7226

7590 10/06/2004

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EXAMINER	
JONES, DAVID	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 10/06/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/704,724	SASAKI ET AL.	
	Examiner	Art Unit	
	David L Jones	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 2 is objected to because of the following informalities: claim 2, line 21 recites "cayenne" it is understood to be "cyan". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolash et al. (US 5,940,093).

Regarding claim 1, Bolash et al. (Bolash) teaches a recording method comprising:

providing a recording head (fig. 1, 10, column 3, lines 15-32) which projects a plurality of recording spots on a recording medium; and

recording (fig. 2, column 4, lines 15-34), by said projected recording spots, a plurality of colors on the recording medium in both a main scanning direction (across the face of the print

head) and a sub-scanning direction (across the face of the paper or medium) perpendicular to said main scanning direction, as taught by Bolash that the paper is moved to an initial registration location, then printing is being done either in color or utilizing black, the system then moves the paper in an advance or reverse direction as shown in figure 2, and taught in column 4, lines 35-67, and the system moves the print head and the paper simultaneously to a position that is a distance that will allow to overcome any harmonic error. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as taught by Bolash that the distance can be any predetermined distance such as the distance of "A" or larger to overcome or bias the harmonic disturbances in the system to overcome print errors, further, since a spot can be any particular size it is obvious that the system of Bolash is performing the same functions as recited in claim 1 of offsetting by at least one spot.

Regarding claim 2, Bolash teaches a recording method comprising:

providing a recording head (fig. 1, 10 and 12, column 3, lines 15-32) which projects a plurality of recording spots on a recording medium, it is well known in the art that the print head of Bolash could incorporate all the colors into one head; and as shown the colors to be used are: Black, cyan, yellow, and magenta.

Recording (fig. 2, column 4, lines 15-34), by said projected recording spots, a plurality of colors on the recording medium in both a main scanning direction (across the face of the print head) and a sub-scanning direction (across the face of the paper or medium) perpendicular to said main scanning direction, as taught by Bolash that the paper is moved to an initial registration location, then printing is being done either in color or utilizing black, the system then moves the paper in an advance or reverse direction as shown in figure 2, and taught in column 4,

lines 35-67, and the system moves the print head and the paper simultaneously to a position that is a distance that will allow to overcome any harmonic error. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as taught by Bolash that the distance can be any predetermined distance such as the distance of "A" or larger to overcome or bias the harmonic disturbances in the system to overcome print errors, further, since a spot can be any particular size it is obvious that the system of Bolash is performing the same functions as recited in claim 1 of offsetting by at least one spot.

Regarding claim 3, Bolash teaches a recording method, wherein a recording (fig. 2, column 4, lines 15-34), by said projected recording spots, a plurality of colors on the recording medium in both a main scanning direction (across the face of the print head) and a sub-scanning direction (across the face of the paper or medium) perpendicular to said main scanning direction, as taught by Bolash that the paper is moved to an initial registration location, then printing is being done either in color or utilizing black, the system then moves the paper in an advance or reverse direction as shown in figure 2, and taught in column 4, lines 35-67, and the system moves the print head and the paper simultaneously to a position that is a distance that will allow to overcome any harmonic error. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as taught by Bolash that the distance can be any predetermined distance such as the distance of "A" or larger to overcome or bias the harmonic disturbances in the system to overcome print errors, further, since a spot can be any particular size it is obvious that the system of Bolash is performing the same functions as recited in claim 1 of offsetting by at least one spot. As seen in figure 2, the different colors are separated by distance of more than "A", and each color is separated by the same amount to affect the

harmonic errors, to remove printing errors. Further, as taught by Bolash (column 5, lines 5-6) that the distance "D" is exaggerated for illustration and clarity, but that the distance can be any predetermined distance.

Regarding claim 4, Bolash teaches a recording method, wherein a recording (fig. 2, column 4, lines 15-34), by said projected recording spots, a plurality of colors on the recording medium in both a main scanning direction (across the face of the print head) and a sub-scanning direction (across the face of the paper or medium) perpendicular to said main scanning direction, as taught by Bolash that the paper is moved to an initial registration location, then printing is being done either in color or utilizing black, the system then moves the paper in an advance or reverse direction as shown in figure 2, and taught in column 4, lines 35-67, and the system moves the print head and the paper simultaneously to a position that is a distance that will allow to overcome any harmonic error. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as taught by Bolash that the distance can be any predetermined distance such as the distance of "A" or larger to overcome or bias the harmonic disturbances in the system to overcome print errors, further, since a spot can be any particular size it is obvious that the system of Bolash is performing the same functions as recited in claim 1 of offsetting by at least one spot. As seen in figure 2, the different colors are separated by distance of more than "A", and each color is separated by the same amount to affect the harmonic errors, to remove printing errors. Further, as taught by Bolash (column 5, lines 5-6) that the distance "D" is exaggerated for illustration and clarity, but that the distance can be any predetermined distance.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolash et al. as applied to claims 1-4 above, and further in view of Herwald et al. (US 6,695,426).

Regarding claims 5-8, Bolash teaches a recording method, wherein a recording (fig. 2, column 4, lines 15-34), by said projected recording spots, a plurality of colors on the recording medium in both a main scanning direction (across the face of the print head) and a sub-scanning direction (across the face of the paper or medium) perpendicular to said main scanning direction, as taught by Bolash that the paper is moved to an initial registration location, then printing is being done either in color or utilizing black, the system then moves the paper in an advance or reverse direction as shown in figure 2, and taught in column 4, lines 35-67, and the system moves the print head and the paper simultaneously to a position that is a distance that will allow to overcome any harmonic error. Although, it is not explicitly taught by Bolash it would have been obvious to one of ordinary skill in the art at the time the invention was made that the system includes a controller to control movement of the printing head.

Whereas, Herwald et al. (Herwald) teaches (column 4, lines 15-34) a controller (fig. 1, 20) which controls said recording head. Further, Herwald teaches in column 4, lines 52-67, printing in both a scanning and a sub-scanning direction.

Bolash and Herwald are analogous art because they both are from the same field of endeavor, image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the controller of Herwald with the system of Bolash.

The suggestion/motivation for doing so would have been to provide bi-directional control of the printing head for control to reduce vertical banding defects (column 6, lines 36-43).

Therefore, it would have been obvious to combine Herwald with Bolash to obtain the invention as specified in claims 5-8.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haas et al. (5,808,655) discloses a thermal printing method using scan line interleaving while avoiding overlapping of dye-transfer tracks upon the donor material within a single pass of the multiple-source array to avoid artifacts of thermal interactions among either sources or printing spots.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L Jones whose telephone number is (703) 305-4675. The examiner can normally be reached on Monday - Friday (7:00am - 3:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David L. Jones

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